

CHAPTER 02

General biophysical and cultural environment

ILLABO TO STOCKINBINGAL ENVIRONMENTAL IMPACT STATEMENT

ARTC

INLAND
RAIL

An Australian Government Initiative

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2. General biophysical and cultural environment

This chapter describes the Inland Rail Illabo to Stockinbingal project (the proposal) site, including a summary of its general biophysical and cultural environment, including community, land use and socio-economic aspects.

2.1 Regional setting

The proposal site is located in south-western NSW in the Riverina region, as shown in Figure 2-1. The Riverina region stretches 500 kilometres (km) east to west, covering an area of almost 59,665 km². The region includes 14 local government areas (LGAs) and is home to a population of approximately 175,000 people (RDA, 2016). Major population and service centres in the Riverina include the cities of Wagga Wagga, Albury and Griffith.

2.1.1 Illabo to Stockinbingal corridor

The proposal site crosses two LGAs, with the southern section located in the Junee LGA and the northern section in the Cootamundra–Gundagai Regional LGA (see Figure 2-1). The land impacted by the proposal is predominantly rural land used for agriculture and grazing.

Illabo is a small town located at the southern end of the proposal, 16 km north-east of Junee and 32 km south-west of Cootamundra. The town is located on the Olympic Highway between Junee and Bethunga.

Stockinbingal is at the northern end of the proposal in the Cootamundra–Gundagai Regional LGA. The town is located on Burley Griffin Way between Temora and Harden, 19 km north-west of Cootamundra.

The major towns surrounding the proposal are Wagga Wagga, about 50 km to the south, Young to the north-east and Cootamundra to the east.

2.2 Description of the proposal site

2.2.1 Definition

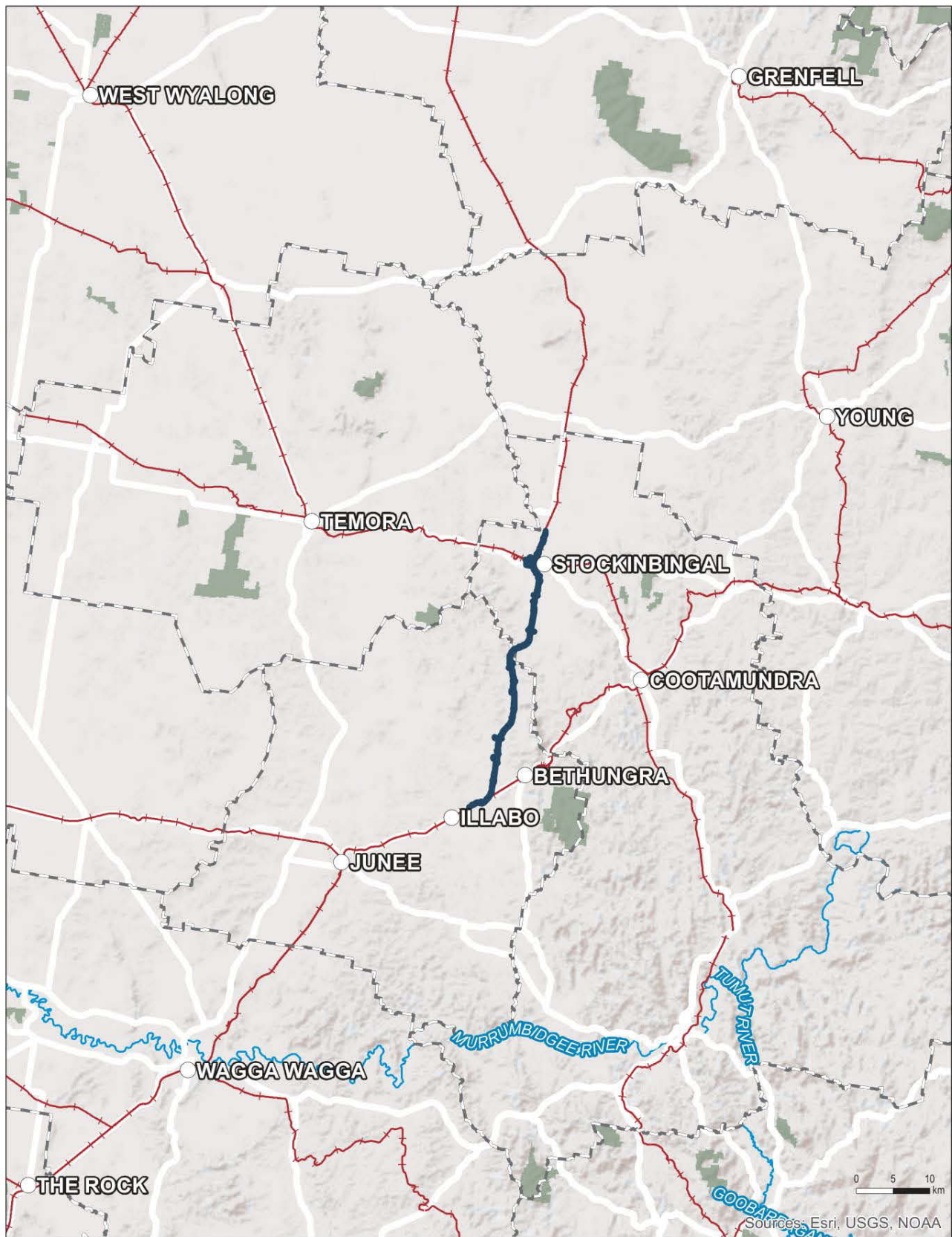
The proposal site is defined as the area that would be used for the construction and operation of the proposal and includes the location of construction worksites and operational infrastructure. It is also referred to as the 'construction footprint'.

For the purposes of the EIS, the proposal site varies in width between about 40 metres (m) and 130 m to cater for large embankments and cuttings to respond to local topography and incorporate ancillary infrastructure such as a crossing loop and associated maintenance siding (see Figure 8-1 in Chapter 8: Proposal description – construction). The proposal site provides for all the required track and associated infrastructure, haul roads, culverts and level crossings. The proposal site also allows for the location of construction compounds and batch plants, as described in Chapter 8: Proposal description – construction.

2.2.2 Description

The alignment would branch out from the existing rail line north-east of Illabo and travel north to join the Stockinbingal–Parkes Line west of Stockinbingal. The route would travel primarily through undeveloped land predominantly used for agriculture. The proposal also includes modifications to the tie-in points at Illabo and Stockinbingal to allow for trains to safely enter and exit the Illabo to Stockinbingal section of Inland Rail.

The proposal site crosses several local and private roads, watercourses and privately owned properties. There are no major towns located within the proposal site between Illabo and Stockinbingal.



Key features of proposal	Existing features
Proposal site	Local Government Area
	Existing rail
	Major watercourse
	Parks and reserves

2.1 Regional context

Coordinate System: GDA 1994 MGA Zone 55
Date: 5/2/2021 Paper size: A4Scale: 1:750,000

Illabo to Stockinbingal Data Sources: LPI, IRDJV, ARTC

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2.3 General biophysical environment of the proposal site

2.3.1 Biodiversity

Much of the proposal site has been heavily modified by past and ongoing disturbances associated with agricultural activities. As a result, the proposal site primarily consists of non-native vegetation or cleared land, with patches of native vegetation scattered within and around the site. In addition, the presence of linear habitat along roads and riparian areas provide connectivity. These patches generally comprise a woodland community, with the dominant canopy species including River Red Gum (*Eucalyptus camaldulensis*), Blakely's Red Gum (*Eucalyptus blakelyi*), Yellow Box and Western Grey Box and White Box Grassy Woodland. No conservation areas, reserves, or national parks are located within or adjacent to the proposal site.

The proposal site crosses six named watercourses including: Billabong Creek, Ulandra Creek, Run Boundary Creek, Isobel Creek, Powder Horn Creek and Dudauman Creek, in addition to other unnamed minor watercourses (e.g. small shallow ephemeral creeks and tributaries). Most of the watercourses along the proposal site are first- and second-order streams with intermittent flows following rain events, and little or poorly defined channels with no aquatic flora species. The watercourses have been modified by agricultural land practices with minimal native vegetation retained along the banks of the watercourses.

No wetlands of international significance (Ramsar) are located within the proposal site, with the nearest wetland, Hattah–Kulkyne Lakes, is located about 400 km upstream.

Further information on biodiversity is provided in Chapter 10: Biodiversity.

2.3.2 Soils

The proposal site lies within the eastern part of the Lachlan Fold Belt, which consists of a complex series of north to north-westerly trending folded bodies of Cambrian to Early Carboniferous sedimentary and volcanic rocks.

The northern and southern sections of the proposal site pass through Quaternary alluvium and colluvial deposits consisting of gravel, sand, silt and clay. The central section of the proposal passes through the Frampton Volcanics, which consist of rhyolite, rhyodacite, dacite, quartz, sandstone, siltstone and conglomerate. The soils found within the proposal site are a combination of brown chromosols, red kandosols and brown sodosols, which generally have a moderate erodibility and erosion hazard.

2.3.3 Water

The proposal is located within the Murrumbidgee River and Lachlan River catchments, which are sub-catchments within the Murray–Darling Basin. The catchment divide lies closer to Stockinbingal and, therefore, most of the proposal site is within the Murrumbidgee catchment.

The six named watercourses crossed by the proposal site (see section 2.3.1) are all at the top of the catchments for their respective valleys and are likely to only flow during rainfall events. No water quality sampling was undertaken for the proposal; however, public water quality data has been taken into consideration in the assessment of impacts on these watercourses as detailed in Chapter 13: Water quality.

Most of the streams are hydraulically connected, as they receive flow from fractured rock aquifers. Groundwater depths vary between 8–150 m, where the shallower regions have been mapped as vulnerable and are more susceptible to groundwater contamination.

In general, the proposal site is characterised by gently sloping and moderately undulating terrain and is not affected by mainstream flooding from large watercourses.

Further information on hydrology, flooding, and water quality is in Chapter 12: Hydrology and flooding and Chapter 13: Water quality.

2.4 General cultural environment of the proposal

A summary of the main cultural characteristics, including land use, heritage, and socio-economic characteristics, of the proposal site follows.

2.4.1 Land use and property

The proposal site traverses greenfield rural areas and the surrounding land is used primarily for grazing and agriculture. The major industries in the area include livestock, wool, wheat, barley and canola. Most of the land within the proposal site has been cleared and disturbed for agricultural activities; however, some patches of remnant vegetation remain.

In Stockinbingal, the proposal site is surrounded by a mix of land uses, including residential, industrial, open space and transport (roads).

Further information on land use and property is in Chapter 18: Land use and property.

2.4.2 Heritage

2.4.2.1 Aboriginal heritage

The region has been home to Aboriginal groups for over 40,000 years, before it was colonised by Europeans in the mid-19th century as a pastoral region providing beef and wool to markets in Australia and overseas. Many historical sources indicate that the proposal site generally extends over the country of the Wiradjuri people. The Wiradjuri nation is comprised of 21 Local Aboriginal Land Councils (LALCs) and represents the largest nation in the NSW Land Rights network. More specifically, the proposal site falls within the Wagga Wagga and Young LALC areas.

The proposal site has been subject to significant disturbance as this area has been impacted by historical and current agricultural practices that are likely to have resulted in the removal or relocation of archaeological evidence that may have been present.

An evaluation of landscape features that indicate the existence of Aboriginal objects or places was undertaken for Ulandra Creek, Powder Horn Creek and Dudauman Creek.

Further information on Aboriginal heritage is provided in Chapter 15: Cultural heritage.

2.4.2.2 Non-Aboriginal heritage

Several heritage-listed items are located within the town of Stockinbingal, but outside the proposal site. The area around Stockinbingal was first settled sometime before 1848, but the village of Stockinbingal was not proclaimed until 1885. By the turn of the century the village had grown to become a significant service centre for the surrounding pastoralists who concentrated their attentions on wheat and sheep. Stockinbingal has maintained its architectural integrity and remains virtually untouched since Federation. Its former commercial buildings remain intact as prime examples of the Australian vernacular style.

Local heritage items within the proposal site include Stockinbingal Railway Station and kurrajong trees and the proposal site falls within the Stockinbingal Heritage Conservation Area. Other local heritage items located adjacent to the proposal site include Begley's store, post office, Powder Horn Museum, Stockinbingal cemetery and other shops and residences located within the Stockinbingal Heritage Conservation Area.

Further information about non-Aboriginal heritage is also in Chapter 15: Cultural heritage.

2.4.3 Social and economic

The community surrounding the proposal site is concentrated in Stockinbingal, with much smaller populations located in towns and localities around the site, including Bethungra, Dirnaseer and Illabo. A small number of residences are located on large rural properties in the vicinity of the proposal site.

Illabo and Stockinbingal are small towns, identified to have populations of 59 and 202 respectively according to the 2016 census (ABS, 2016b). Larger towns in the area include Junee (15 km south-west of Illabo), Cootamundra (33 km north-east of Illabo), Temora (35 km west of Stockinbingal) and Wagga Wagga (50 km south-west of Illabo). The main industries in the area are related to agricultural activities, with the towns such as Illabo, Bethungra and Stockinbingal containing smaller local businesses such as a post office, general store, bakery and newsagencies.

Further information on socio-economic characteristics of the proposal site is in Chapter 17: Social and economic.

2.5 Existing rail facilities and operations

2.5.1 Overview

The existing rail network in the area includes the Main South Line, the Lake Cargelligo Line and the Stockinbingal–Parkes Line. The Main South Line runs from Albury, in a north-east direction, through Illabo to Cootamundra where it continues to Goulburn, Mittagong and Sydney. The Lake Cargelligo Line branches off from Cootamundra north to Stockinbingal, continuing to Lake Cargelligo. The Stockinbingal–Parkes Line begins at Stockinbingal and runs north to the towns of Forbes and Parkes. The Stockinbingal station is no longer in use as a passenger station. Figure 2-1 shows the existing railway lines near the proposal site.

2.5.2 Branches

Illabo is located on the existing Main South Line that runs from Albury to Liverpool in Sydney. This line is a double non-electrified track along the Mittagong to Junee section of railway, after which it becomes a single track to Albury. ARTC has a lease for the line south of Macarthur until 2064. The Main South Line continues north-east from Illabo through the Bethungra Spiral to Cootamundra and continues to Sydney. The Bethungra Spiral is a location where the rail line loops and crosses over itself. This was constructed in the 1940s to provide a suitable gradient to accommodate the topographic constraints.

West of Stockinbingal township, the Lake Cargelligo Line branches off the Cootamundra to Goobang Junction Line (Stockinbingal to Parkes line). This line was opened in 1917 and was used initially for passenger services and goods freight. Passenger services were ceased in 1983 and the line is now primarily used for grain haulage and freight trains to bypass Sydney. The Lake Cargelligo Line is under the Country Rail Network (CRN) lease; the ARTC lease boundary is proposed to be moved west along the current CRN Lake Cargelligo Line to enable the works area to be within the ARTC lease boundary.

The Stockinbingal–Parkes Line (also known as the Forbes Line) runs north–south, joining Stockinbingal to Parkes on the Main West Line. This line was completed between Parkes and Forbes in 1893, and between Forbes and Stockinbingal in 1918. Passenger services operated on the line between Stockinbingal and Forbes until 1974 and between Forbes and Parkes until 1983. No regular passenger services currently use the line, although the Main West Line passenger services occasionally divert over the line when track work closes the main route. This line is part of the main route for goods trains travelling between Sydney and the west of NSW as it allows freight to bypass the Blue Mountains from Cootamundra to Parkes.

2.5.3 Passenger services

The Cootamundra and Junee railway stations remain open to passengers travelling on the Main South Line; however as previously stated, the Stockinbingal station is not currently servicing passengers. NSW TrainLink operates two services a day in each direction between Sydney and Melbourne along the Main South Line.